

REMARKS

This is responsive to the Final Office Action mailed April 17, 2006 ("Office Action") and the Advisory Action mailed July 7, 2006.

Claim Rejections – 35 U.S.C. §102(b) and (e)

Claims 18-19 stand rejected under §102(b) as being anticipated by Abe et al. (U.S. Patent No. 6,576,203) ("Abe").

Among other elements, claim 19, and the claims which depend from claim 19, recites that one of the plurality of modules has a processing core that includes an inert material for mixing components of the gas stream passing therethrough and that the module has a feed nozzle for introducing water to the gas stream. Abe does not anticipate a reactor having a plurality of modules stacked end-to-end wherein one of the modules comprises (1) an inert material for mixing the components of the gas stream passing therethrough and (2) a feed nozzle for introducing water to the gas stream.

First, the Examiner does not assert that Abe expressly discloses "an inert material for mixing components of the gas stream passing therethrough" as recited in claim 19. Rather, the Examiner asserts that the inert pellets of Abe would inherently function to mix gas streams traversing therethrough (Office Action mailed December 12, 2005, p. 9). As support for the Examiner's inherency argument, the Examiner has referenced Corrigan et al. (U.S. Patent No. 6,140,266 at col. 2, lines 18-27) (Office Action, mailed December 12, 2005, p. 9). According to the Examiner, "[b]oth references are analogous because they both teach catalyst bed" (Office Action mailed April 17, 2006, p. 9). Further, the Examiner has cited Section 2144 of the M.P.E.P. as support for the proposition to combine Abe and Corrigan (Office Action mailed April 17, 2006, p. 9). The title of the portion of the M.P.E.P. section cited by the Examiner is as follows: "Sources of Rationale Supporting a Rejection Under 35 U.S.C. § 103" (M.P.E.P., p. 2100-131). As this is a rejection under 35 U.S.C. § 102, Applicants believe that the section of the M.P.E.P. cited by the Examiner is not applicable to this rejection.

The M.P.E.P. provides that “only one reference should be used in making a rejection under 35 U.S.C. 102” (M.P.E.P., p. 2100-67). However, an extra reference can be used to show an inherent characteristic (M.P.E.P., p. 2100-67). Specifically, the Federal Circuit provides that “[t]o serve as an anticipation when the reference (Abe) is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence (Corrigan). Such evidence (Corrigan) must make clear that the missing descriptive matter is necessarily present in the thing described in the reference.” *Continental Can Co. USA v. Monsanto Co.*, 948 F.2d 1264, 20 U.S.P.Q.2d 1746, 1749 (M.P.E.P., p. 2100-67) (emphasis added). However, “[t]he fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic” (M.P.E.P., p. 2100-47). In this case, it is clear that Corrigan fails to provide this necessary evidence as Corrigan does not make clear that the inert pellets of Abe would necessarily function to mix gas streams traversing therethrough.

Second, the Examiner has asserted that Abe teaches a module with an inlet (65) introducing reactive fluid (A) (col. 8, line 32) (Office Action mailed April 17, 2006, pp. 2-3). The Examiner has further stated that pursuant to M.P.E.P. 2115, water does not limit the apparatus claims (Office Action mailed April 17, 2006, p. 3). However, the particular element in question is defined not only with respect to its structure, but with respect to its intended function as well. Claim 19 defines the function, namely the introduction of water to the gas stream, of the particular element, the feed nozzle. The Federal Circuit provides that functional limitations are appropriate and should be considered in determining anticipation. *In re Atwood*, 354 F.2d 365, 148 U.S.P.Q. 203, 210. As a result, water does limit the claim.

Third, while Abe teaches the use of an inert catalyst support in catalyst units (61) and (62), unlike the recitations of claims 18 and 19, the use of an inert material separate and apart from a catalyst is not taught for any purpose in Abe. The Examiner believes that “an inert material separate and apart from a catalyst” is not recited in a rejected claim (Office Action mailed April 17, 2006, p. 10). Applicants

respectfully disagree. Claims 18 and 19 clearly refer to "inert material" without any mention of a catalyst.

For these reasons, claim 19, and the claims which depend from claim 19, is not believed to be anticipated by Abe. Reconsideration and withdrawal of the rejection of claims 18-19 under §102(b) as being anticipated by Abe is respectfully requested.

Claims 4, 8-14, and 20-28 stand rejected under §102(e) as being anticipated by Gonjo (U.S. Patent No. 6,159,434)(“Gonjo”).

Claim 8, and the claims which depend from claim 8, is believed to be in condition for allowance as Gonjo fails to anticipate an apparatus comprising a plurality of modules stacked end to end along a common axis that includes a first module having a partial oxidation catalyst within the processing core of that module. Gonjo does not disclose, teach, or suggest a first module having a partial oxidation catalyst within the processing core of that module (FIG. 1). In Gonjo, the gas stream flow starts at a first end (1). As shown in FIG. 1, in the first portion, a liquid feed heating portion 1 preheats supplied liquid feed (Col. 9, lines 47-48). As shown in FIG. 1, catalytic combustion takes place several portions later (6a).

The Examiner has referenced Figure 12 of Gonjo to demonstrate that Gonjo discloses a first module having a partial oxidation catalyst within the processing core (Office Action mailed April 17, 2006, p. 10). However, a review of Gonjo reveals that FIG. 12 describes the “multilayer reforming portion 4 and the catalytic combustion portions 6a and 6b of the fuel reforming apparatus” (Col. 15, lines 28-30) rather than the entire apparatus. As a result, Applicants respectfully disagree with the Examiner’s assertion that Gonjo discloses, teaches, or suggests a first module having a partial oxidation catalyst within the processing core of that module. As demonstrated above, Gonjo does not explicitly disclose, teach, or suggest a first module having a partial oxidation catalyst within the processing core of that module.

As a result, claim 8, and the claims which depend from claim 8, are not believed to be anticipated by Gonjo. Reconsideration and withdrawal of the rejection

of claims 4, 8-14, and 20-28 under §102(e) as being anticipated by Gonjo is respectfully requested.

Claim Rejections – 35 U.S.C. §103(a)

Claim 3 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Gonjo as applied to claim 8, and further in view of Nishida et al. (U.S. Patent No. 5,387,399)(“Nishida”). Based on the foregoing discussion related to claim 8, claim 3 is believed to be in condition for allowance.

In addition, the Examiner has suggested that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include in each module an annual lip at either the first end or the second end of the shell and an annular recessed portion at the opposite end of the shell, and wherein the annular lip of one module is receivable into the annular recess of the adjacent module in Gonjo’s modified apparatus as taught by Nishida. The Examiner provides no explanation of the suggestion or motivation to combine Gonjo and Nishida other than the assertion that “both Gonjo and Nishida teach a reactor having a plurality of modules.” This assertion fails to explain the suggestion or motivation to combine the references. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). Therefore, claim 3 is not unpatentable over Gonjo in view of Nishida. Reconsideration and withdrawal of the rejection of claim 3 under §103(a) is respectfully requested.

Claims 5-7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Gonjo as applied to claim 8, and further in view of Skala et al. (U.S. Patent No. 6,238,815) (“Skala”). Based on the foregoing discussion related to claim 8, claims 5-7 are believed to be in condition for allowance.

In addition, the Examiner has suggested that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a pair of screen support members mounted in proximity to the first and second end of the shell, as taught by Skala, in Gonjo’s reformer. The Examiner provides no explanation of the suggestion or motivation to combine Gonjo and Skala other than

the assertion that "both Gonjo and Skala are related as both being reformers." This assertion fails to explain the suggestion or motivation to combine the references. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). Therefore, claims 5-7 are not unpatentable over Gonjo in view of Skala. Reconsideration and withdrawal of the rejection of claims 5-7 under §103(a) is respectfully requested.

Claims 15-16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Gonjo as applied to claims 8 and 20 and further in view of Clawson et al. (U.S. Patent No. 6,126,908) ("Clawson '908"). Based on the foregoing discussion related to claim 8, claims 15-16 are believed to be in condition for allowance.

In addition, the Examiner has suggested that it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a desulfurizing agent in the processing core of the reformer module, as taught by Clawson, in Gonjo's reactor. The Examiner provides no explanation of the suggestion or motivation to combine Gonjo and Clawson other than the assertion that "both Gonjo and Clawson are both analogous as they both teach a reforming reactor." This assertion fails to explain the suggestion or motivation to combine the references. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). Therefore, claims 15-16 are not unpatentable over Gonjo in view of Clawson. Reconsideration and withdrawal of the rejection of claims 15-16 under §103(a) is respectfully requested.

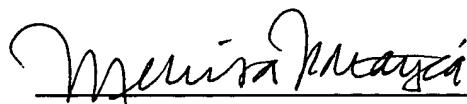
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All of the stated grounds of objection and rejection are believed to have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this

application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,



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